

**REMARKS**

Claims 31, 35-48, and 50-53 are currently pending in the present application, including independent claim 31. Independent claim 31 is directed to a substrate for reducing odor. The substrate is porous and comprises a nonwoven, woven, or paper web. The substrate contains colloidal silica nanoparticles configured to adsorb one or more odorous compounds. The silica nanoparticles have an average size of from about 1 to about 50 nanometers and a surface area of from about 50 to about 1000 square meters per gram. Further, the silica nanoparticles are relatively nonporous and thus have a pore volume of less than about 0.4 milliliters per gram. Without intending to be limited by theory, the present inventors believe that the solid nature, i.e., low pore volume, of the colloidal nanoparticles may enhance the uniformity and stability of the nanoparticles, without sacrificing its odor adsorption characteristics.

In the Final Office Action of February 27, 2008, independent claim 31 was rejected under 35 U.S.C. § 102(b) as being anticipated by EP1188854 to Honda, et al. In response, Applicants filed a Notice of Appeal accompanied with a Pre-Appeal Brief Request for Review. Applicants' full arguments regarding Honda, et al. are of record. In summary, however, Applicants noted that Honda, et al. is not "configured to adsorb one or more odorous compounds" nor does Honda, et al. disclose colloidal silica nanoparticles as required by independent claim 31.

Honda, et al. discloses that the invention's primary function is to decompose malodorous compounds rather than adsorb them:

There are also known deodorants which utilize physical adsorption, such as active carbon and silica. **However, with these, the malodorous compounds are adsorbed and not decomposed, so they do not**

**fundamentally resolve the situation.** Ideally, it is necessary that malodorous compounds be completely decomposed to odorless components. Pg. 2, ¶ [0005], ll. 30-32.

Honda, et al. gives further reasons why the invention is not configured to adsorb odorous compounds:

In the case of fibre structures which have been subjected to such deodorant processing, **the adsorbed components may themselves give rise to a bad smell** or the malodorous components may be changed by decomposition into other components which themselves produce a strange smell. Pg. 2, ¶ [0007], ll. 44-46.

Honda, et al. utilizes a photocatalyst in order to decompose odorous compounds rather than being configured to adsorb them as claim 31 requires.

In response to the Pre-Appeal Brief Request for Review, the Panel determined that prosecution should be reopened. In the present Office Action, U.S. Patent Application No. 2002/0006425 to Takaoa, et al. has been added in combination with Honda, et al. in a 35 U.S.C. § 103(a) rejection. Claims 31, 35-43, 47, 49, 50, and 53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Honda, et al. in view of Takaoa, et al. The Office Action states that "what is lacking is a teaching of instantly claimed silica particles. Takaoa teaches the use of SNOWTEX-AK for removing odors."

As a preliminary matter, Takaoa, et al. is additionally not configured to adsorb odors as claimed by Applicants. Takaoa, et al. notes:

In the case of this gas adsorbability, the gas adsorption is physical adsorption and is in thermal equilibrium. Therefore, when the temperature of the carrier is raised by light irradiation, harmful materials adsorbed on the carrier without light irradiation are released and at the same time, **decomposed** by the photoreactive semiconductor supported on the carrier. ¶ [0119]

Thus, like Honda, et al., Takaoa, et al. seeks to decompose gaseous compounds rather than adsorb.

However, even if Takaoa, et al. properly disclosed Applicants' "colloidal silica nanoparticles configured to adsorb one or more odorous compounds," Applicants respectfully submit that the silica particles of Takaoa, et al. may not be incorporated into Honda, et al. as Honda, et al. explicitly **teaches away** from adsorbing odor compounds as claimed by Applicants. As noted above and in Applicants' Pre-Appeal Brief Request for Review, Honda, et al. teaches:

There are also known deodorants which utilize physical adsorption, such as active carbon and **silica**. **However, with these, the malodorous compounds are adsorbed and not decomposed, so they do not fundamentally resolve the situation.** Ideally, it is necessary that malodorous compounds be completely decomposed to odorless components. Pg. 2, ¶ [0005], ll. 30-32.

Thus, Honda, et al. teaches one of ordinary skill in the art that "deodorants . . . such as . . . silica" are not desired as they do not decompose as required. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. Furthermore, a "prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." M.P.E.P. § 2141.02. As such, Applicants respectfully request withdrawal of this rejection.

In the Office Action, claims 1-45 and 49-53 were rejected under 35 U.S.C. §103(a) as being unpatentable over Honda, et al. in view of Takaoa, et al. and further in view of WO 03/025067 to Beaverton. As a preliminary matter, claims 1-30 and 32-34

have been previously cancelled from the present application. As independent claim 31 was rejected under Honda, et al. in view of Takaoa, et al., Applicants assume that this rejection adding Beaverton to the combination is intended to address additional limitations of the depending claims. Specifically, Beaverton appears to be cited in reference to claims 44, 45, 51, and 52. Applicants respectfully submit that Beaverton fails to remedy the deficiencies of Honda, et al. and Takaoa, et al. noted above. Thus, for at least the reasons noted above, claims 31, 35-45, and 49-53 patentably define over Honda, et al. in view of Takaoa, et al. and further in view of Beaverton.

Additionally, in the Office Action, claims 31, 35-43, 47, 50, and 53 were rejected under 35 U.S.C. §103(a) as being unpatentable over Honda, et al. in view of Takaoa, et al. and further in view of U.S. Patent No. 5,762,643 to Ray, et al. As independent claim 31 was rejected under Honda, et al. in view of Takaoa, et al., Applicants assume that this rejection adding Ray, et al. to the combination is intended to address additional limitations of the depending claims. Specifically, Ray, et al. appears to be cited in reference to claim 47. Applicants respectfully submit that Ray, et al. fails to remedy the deficiencies of Honda, et al. and Takaoa, et al. noted above. Thus, for at least the reasons noted above, claims 31, 35-43, 47, 50, and 53 patentably define over Honda, et al. in view of Takaoa, et al. and further in view of Ray, et al.

In addition to the rejections noted above, claims 31, 38, and 43-47 were also provisionally rejected under the judicially created doctrine of obvious-type double patenting in view of pending U.S. Application Serial No. 10/686,938. Additionally, claims 31, 43, 50, and 53 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 7,141,518.

Appl. No. 10/686,933  
Response dated Nov. 14, 2008  
Reply to Office Action of Aug. 14, 2008

To the extent necessary, Applicants agree to submit terminal disclaimers for both references at such time that the application is otherwise in condition for allowance.

As a final matter, Applicants note that claim 46 only contains double patenting rejections. Claim 48 does not contain any rejections and Applicants deem claim 48 as allowable.

Applicants respectfully submit that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested. Examiner Silverman is invited and encouraged to telephone the undersigned, however, should any issues remain after consideration of this Response.

Please charge any additional fees required by this Response to Deposit Account No. 04-1403.

Respectfully requested,

DORITY & MANNING, P.A.

  
Ryan P. Harris  
Ryan P. Harris  
Registration No. 58,662  
P.O. Box 1449  
Greenville, SC 29602-1449  
Phone: (864) 271-1592  
Facsimile: (864) 233-7342

Date: 11/14/08